



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,485	03/22/2004	Simon Kang	23976-08765	3037
758	7590	01/31/2006	EXAMINER	
FENWICK & WEST LLP SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			PATEL, VIP	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

21

<b>Office Action Summary</b>	<b>Application No.</b> 10/807,485	<b>Applicant(s)</b> KANG ET AL.	
	<b>Examiner</b> Vip Patel	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 18-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1004</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **Drawings**

The drawings are objected for following reasons.

Figures 1-5 are not designated by a legend such as "Prior Art". The legend is necessary in order to clarify what applicant's invention is (see MPEP § 608.02g).

Applicant is required to submit a proposed drawing correction, showing changes in red ink, in response to this Office action. However, formal correction of the noted defect(s) can be deferred until the application is allowed by the examiner (see MPEP 608.02v).

### **Claim Rejections - 35 USC § 112**

Claims 1-17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, applicant claims an emitter electrode structure; a barrier layer". The semi colon after the phrase word "electrode structure" suggests that a barrier layer is or part of electrode structure. From reading the specification and viewing drawing 6A, it seems emitter electrode structure 610 and barrier layer 640 are separate and different elements. Clarification is required.

In claim 2, line 2, applicant claims an "an emitter electrode". Is "an emitter electrode" recited in claim 2 different from "an emitter electrode structure" recited in claim 1? From reading the specification and viewing the drawings, it seems both elements are the same.

In claim 3, line 2, a similar situation also appears with "a plurality of electron emissive elements" also recited in claim 1. Similar situations appear throughout the claims (for example see claim 4, claim 5). Applicant is requested to thoroughly review the claims and correct the similar situations pointed out above.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art and Hsu (US 6590322).

Admitted prior art discloses an electron emitting device/field emission device (figure 5) comprising an emitter electrode/structure (110), a catalyst layer(120) electrically coupled to the electrode structure, and electron emissive elements (140).

Admitted prior art does not disclose a barrier layer. However, in the same field of endeavor, in lines 17-25 of column 16, Hsu teaches such barrier layer (buffer layer) for the purpose of providing strong adhesion and to prevent alloying between the films. Thus, it would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to provide Hsu's barrier layer in the prior art device for the purpose of providing strong adhesion and to prevent alloying between the films.

Regarding claim 2, admitted prior art already discloses a resistive layer (115) over the emitter electrode.

Regarding claim 3, the limitation of how electron emissive elements are formed is directed to the process of making the device and therefore it is not deemed positive product limitations. As such, no patentable weight has been given to such process limitation (see MPEP 2113). The product of the prior art as evidenced by the references is obtainable by any suitable process of preparing thereof.

Regarding claim 4, Hsu's barrier layer provided for the reason stated in rejection of claim 1 and prior art's catalyst layer would be laterally separated sections or in layer forms (as taught in lines 17-24 of column 16) electrically coupling the emitter electrode and electron emissive elements.

Regarding claim 5, admitted prior art already discloses a dielectric layer (125) with an opening and a gate electrode layer (130) having the opening.

Regarding claim 6, admitted prior art's emissive elements are carbon nano-tubes (140).

Regarding claim 16, admitted prior art's catalyst layer comprises conductive metal nickel.

Regarding claim 17, in order to have complete and operation device, the device of claim 1 inherently has a phosphor layer in order for electrons emitted from the emissive elements to land on and obtain a display.

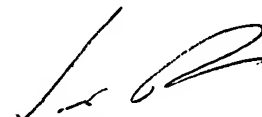
Regarding claims 7-15, barrier layer of Hsu comprises Ti and Ta (see line 29 of column 16). Further, other metals performs the identical purpose in the barrier layer and therefore a matter of design choice for an artisan.

Art Unit: 2879

### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vip Patel whose telephone number is (571) 272-2458. The examiner can normally be reached on Monday-Thursday. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VIP PATEL  
PRIMARY EXAMINER  
ART UNIT 2879